

REMARKS/ARGUMENTS

The Examiner provisionally rejects Claims 27 and 32-47 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-41 and 45-65 of copending Application No. 10/614,340. A suitable Terminal Disclaimer will be filed when the application is ready for allowance.

The Examiner objects to Claims 29-31 and 49 under 37 CFR§1.75(c) as being of improper dependent form. The claims have been amended to overcome this objection.

The Examiner objects to Claim 27 because the amendment to the claim changes the scope of the claim so that it does not match the preamble. The claim has been amended to overcome this objection.

The Examiner rejects Claims 35 and 46 under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 35 and 46 has been amended to overcome this rejection.

The Examiner rejects Claim 35 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claim 35 has been amended to overcome this rejection.

The Examiner rejects Claims 27 and 32-47 under 35 U.S.C. §103(a) as being unpatentable over JP 56-058824 (“Kondou et al.”) in view of JP 58-062027 (“Moriyama et al.”), U.S. 4,810,549 to Abrams, et al., and U.S. 6,646,022 to Okazaki, et al.

The cited references fail to teach or suggest at least the following italicized features of Claim 27:

27. A method, comprising:
providing a flocked transfer sheet, a *pre-formed, self-supporting*, and *thermosetting* adhesive film, and a thermoplastic backing film;
thereafter laminating the flocked transfer sheet, the thermosetting adhesive film, and the backing film together to form a mold insert; and
forming the mold insert into a *three-dimensional* shape that substantially corresponds to a surface of at least a portion of a mold;
positioning the mold insert in the mold;
while the mold insert is positioned in the mold, introducing a resin into the mold to form a molded article comprising resin and the mold insert, *wherein the thermosettable adhesive film is thermoset before the introducing step.*

Kondou et al.

Kondou et al. teaches, on surface of a film sheet 2, a decorative layer 3 having characters or patterns, an adhesive layer 4, and a layer 5 comprising a material for contacting a resin in the molded article are laminated together. On the other surface of the sheet 2, a tape layer 7 having sticking agent layers on both surfaces thereof and a mold release layer 6 are laminated to form the decorative member 1. Subsequently, the decorative member 1 is adhered to a cavity 9 of a fixed metal mold 8 by the tape layer 7 having sticking layers on both surfaces thereof after the mold release paper 6 is peeled and fixed thereon. Next, a movable metal mold 10 is clamped to the fixed metal mold 8 and a synthetic thermoplastic resin or a rubber is injected into the cavity 9 to form a molded article having the decorative member 1 inserted therein and the adhesive layer 7 is removed from the decorative material 1 to obtain the product.

Kondou et al. fails to teach or suggest the use of flock as the decorative layer, the use of a thermosetting adhesive as the adhesive layer, laminating a flocked transfer sheet, the thermosetting adhesive, and backing film together, forming the mold insert into a three-dimensional shape, and the thermoset adhesive being thermoset before contact of the mold insert with the resin.

Moriyama et al.

Moriyama first recognizes the problem in the art of obtaining a desired adhesion between an adhesive and/or a substrate to a molding resin. For example, Moriyama teaches that it was conventional to affix “lining material 2 to the back surface side of a skin 1 made of cloth and foam molding a foam molding resin to the back surface side of this lining material 2 to form a foamed body 3, as shown in Figure 1.” (Emphasis supplied.) However, Moriyama notes that “[w]hen skin is made of cloth, moldability is poor because fiber stretchability is poor.” (Emphasis supplied.) In addition, Moriyama teaches that when another substrate, such as vinyl chloride or rubber, is used, “adhesion with the foamed body is poor.” See page 2 of the English translation of Moriyama. Even further, Moriyama teaches away from the use of a backing

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material (lining material 2) because the lining material 2 “has a disadvantage in that it increases thickness of skin 1 and makes the surface less comfortable.”

To provide a better adhesion between the flock and adhesive and the resin, Moriyama proposes injecting a foamable synthetic resin onto a flocked skin 11, setting a top force, and allowing the resin to foam to form a molded article having the skin 11 fused to the molded foam body 18. The skin 11 comprises a thin layer 12 made from a thermoplastic resin, such as an olefin sheet, and flocking material 13 that has been electrostatically flocked on a top surface side of the thin layer 12. The resulting foamed-molded body is chiefly obtained by allowing the resin solution to foam. See pages 2-3 of the English translation of Moriyama. Moriyama, however, does not provide any teaching or suggestion of a polymeric backing material between a permanent adhesive and a resin to solve the problem of insufficient adhesion of an adhesive to a resin. Instead, Moriyama teaches only that the use of fabric/cloth/rubber/vinyl chloride do not adequately address the problem and that foaming the resin enables the resin to fuse with a thin thermosetting sheet. Moriyama, however, is wholly silent to, and teaches away from, solving the problem of insufficient adhesion between an adhesive and the resin through use of a polymeric backing material. Moriyama et al. further fails to teach or suggest the use of a thermosetting adhesive as the adhesive layer, laminating a flocked transfer sheet, the thermosetting adhesive, and backing film together, forming the mold insert into a three-dimensional shape, and the thermoset adhesive being thermoset before contact of the mold insert with the resin.

Moriyama apparently adheres the flock only to a thermoplastic thin layer 12 (which therefore acts as a permanent adhesive). Therefore, Moriyama fails to teach and to recognize the utility of not only of a thermoset adhesive but also of a polymeric backing material in forming a bond between parts of a molded article. The Examiner cannot properly maintain that the claimed polymeric backing material is capable of instant and unquestionable demonstration as being obvious to one of ordinary skill in the art as a way to overcome the problem of forming strong bonds among the parts of a molded article.

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The combination of Kondou, et al., and Moriyama fails to teach the use of thermosetting adhesive. First, Kondou et al. fails to recognize that a thermoplastic adhesive will not work with flock because the adhesive will soften during molding, causing the flock to become disoriented and the “feel” and appearance of the article to be marred. Thus, one of ordinary skill in the art would have no reason to select a thermosetting adhesive over a thermoplastic adhesive. Second, Moriyama et al., with which the Examiner combines Kondou et al., explicitly teaches that the resin thin layer 12, which appears to act as an adhesive layer in holding the flock, is thermoplastic so that it will melt bond with the resin. The Examiner cannot pick and choose features from patents having contradictory teachings to show that the invention is obvious. This is impermissible hindsight. The combination of Kondou et al. and Moriyama et al. simply fail to teach or suggest the combination of a thermosetting adhesive to resist molding temperatures and maintain flock orientation and plushness with a thermoplastic backing layer that can form a melt bond with the resin.

Finally, the Examiner turns to U.S. 4,810,549 to Abrams et al. and U.S. 6,646,022 to Okazaki, et al. Neither patent, however, fails to address the deficiencies of Kondo et al. and Moriyama et al.

Abrams

Abrams is directed to a multicolor flock transfer comprising (a) a base sheet 4 having a surface area coated with a release adhesive 6; (b) precolored flock 8 of at least two different colors that are longer than 0.3 mm having ends adhering to the surface area in the form of predetermined color patterns of a design; and (c) a binding adhesive 10 applied to other ends of the precolored flock, whereby said predetermined color patterns of the design of the multicolor flock is adapted to be transferred onto a product. The binding adhesive 10 is “a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder may contain an additional adhesive, a hot melt [or thermoplastic adhesive], for binding the transfer to the substrate. In the alternative the hot melt adhesive 12, usually a granular polyester or nylon, may form a separate layer.” (Col. 2, lines 55-61.)

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Abrams fails to overcome the deficiencies of Moriyama because Abrams also does not teach or suggest a polymeric backing film between molded resin and a permanent adhesive layer.

Okazaki, et al.

Okazaki, et al., teaches a process of production of a photocuring sheet comprising the steps of coating a mixed solution including a photocuring resin composition (A) and solvent on a substrate sheet (B) and heating the coated substrate sheet (B) to cause the solvent to vaporize, wherein the coated substrate sheet (B) is not heated continuously for 20 seconds or more to a temperature equal to or higher than a glass transition temperature of a resin ingredient (b) comprising a main ingredient of the substrate sheet (B). A photocuring insert molding sheet comprising a printed layer and/or a deposited layer and an adhesive layer and a primer sheet formed on a substrate sheet (B) side of the photocuring sheet may be manufactured. Okazaki, et al., further teaches a process of production of an insert molded article comprising the steps of inserting and arranging any of the above photocuring sheets, any of the above photocuring decorative sheets, or any of the above photocuring insert molding sheets so that the photocuring resin composition side faces the inner wall of a mold, closing the mold, injecting a molten resin into the mold, and allowing the resin to solidify to form a resin molded article with a photocuring sheet, photocuring decorative sheet, or photocuring insert molding sheet arranged on its surface, and irradiating light to photocure the photocuring resin composition on the surface of the molded article.

Okazaki, et al., further teaches, at col. 21, lines 1-18, the use of a woven fabric or foamed layer to provide gas permeability to gas produced from the molding resin and, at col. 21, lines 19-67, forming the mold insert into a three dimensional shape before contact with the resin.

Okazaki, et al., fails to teach the use of flock as the decorative layer, the use of a thermosetting adhesive as the adhesive layer, a polymeric backing film, laminating a flocked transfer sheet, the thermosetting adhesive, and backing film together, and the thermoset adhesive being thermoset before contact of the mold insert with the resin. Okazaki, et al., specifically

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teaches, in order of appearance, a printed layer, a primer layer, an adhesive layer, a deposited layer, and a photocuring sheet.

The dependent claims provide further bases for allowability.

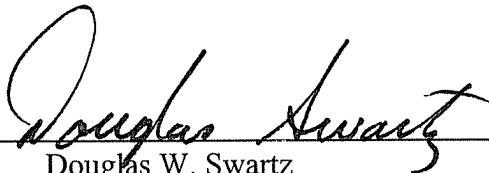
By way of example, dependent Claim 51 requires the backing film and resin to have different chemical compositions. Kondou, et al., fails to teach that the compositions of the resin and the layer 5 are different. In fact, Kondou et al. does not appear to teach the compositions of the layer 5 and the resin.. Moriyama et al. further fails to teach or suggest that the compositions of the resin and adhesive are different.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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